Weekly Summary Report
USEPA Oversight, Sauget Area 2, Sauget, IL
WA No. 224-RXBF-05XX / Contract No. 68-W6-0025

Week Ending Friday, August 27, 2004

This report summarizes the Interim Remedial Action (IRA) work conducted by Solutia and its contractors from August 21 through August 27, 2004 at Site R, Sauget Area 2. The current IRA fieldwork consists of site preparation, barrier wall trenching, and backfilling, with excavation performed on day and night shifts.

Contractors Onsite

Inquip Associates Inc. (barrier wall construction contractor)
PSI (geotechnical testing subcontractor)
Aerotek (air monitoring subcontractor)
Zahner Survey (surveying contractor to Inquip)
URS (primary consultant for Solutia)

Work Performed This Week

Work at the site continued with excavation and backfill activities on the open trench segment located in the northern portion of Site R. Backfill was placed into the open trench on four days during the week.

Excavation activities continued with the Liebherr 843 and Liebherr 853 hydraulic clamshells, and the Koehring 1266 trackhoe during the week. By the end of the week, the open trench extended to approximately 1,210 feet in length.

Excavation activities were estimated to be 91.7 percent complete by the end of the week, with backfill activities at approximately 65.7 percent complete.

Groundwater Migration Control System (GMCS)

The river elevation showed a generally slow increasing trend during the week, from 385.76 feet above mean sea level (amsl) on August 20, to 390.63 feet amsl on August 27. The combined flow rate of the extraction well system followed this pattern showing a steady decrease from 1,410 gallons per minute (gpm) on August 20 to 1,122 gpm on August 27.

Eight barrier wall piezometers, with four inside and four outside the barrier wall alignment, monitored the groundwater elevations adjacent to the barrier wall alignment during the week. Table 1 shows the river and piezometer water elevations measured on August 27, 2004 (1:00 PM).

The piezometer pairs P1 and P4 generally showed an outward gradient across the barrier wall early in the week, with the water levels at piezometers located inside the wall between 0.8 to 3 feet greater than levels measured in the corresponding piezometer located outside of the wall alignment. The last two days of the week these two piezometer pairs showed an inward gradient with between 0.5 and 2 feet of difference between the piezometers located

inside and corresponding piezometers outside the barrier wall alignment. Piezometer pairs P2 and P3 showed an outward gradient across the barrier wall during the early part of the week, but due to erratic readings at one piezometer of each pair, the data from August 25 through the end of the week could not be interpreted. URS will monitor and inspect the piezometers P2E and P3W next week following the observation of erratic water level measurements by the transducers at these locations.

During the week, the gradient between the river and the piezometers located inside the barrier wall alignment varied, with the river level fluctuating from slightly lower to slightly higher in elevation. The river level remained generally higher than the piezometers located outside the barrier wall during the week (now constructed at all piezometer pairs except P1).

TABLE 1
River and Piezometer Water Elevations – August 27, 2004 (13:00)

	Elevation (ft above mean sea level)
River Level	390.63
Piezometer 1S – inside wall (northern-most pair)	387.05
Piezometer 1N – outside wall (northern-most pair)	388.12
Piezometer 2E – inside wall (north-central pair)	NA
Piezometer 2W – outside wall (north-central pair)	388.271
Piezometer 3E – inside wall (south-central pair)	386.71
Piezometer 3W – outside wall (south-central pair)	NA
Piezometer 4E – inside wall (southern-most pair)	386.55
Piezometer 4W – outside wall (southern-most pair)	387.78

Stormwater

There were rain events on one day and two nights of the week, however the amounts did not pool sufficiently to warrant pumping or slow down site activities. No stormwater activity took place this week.

Barrier Wall Construction

Inquip continued excavation of the trench along the barrier wall alignment, extending the open trench east to station 36+60. As of August 27, the open trench was approximately 1,210 feet in length.

Inquip continued excavation in the open trench during a night shift. During this shift, one hydraulic clamshell rig excavated spoils from the trench, and slurry was pumped into the trench as necessary. No backfill activity occurred during the night shift.

The Koehring 1266 trackhoe excavated material from the open trench intermittently on five days during the week. The Liebherr 843 hydraulic clamshell was repaired and accordingly operated on three days of the week. The 853 hydraulic clamshell operated on five days, and performed trench clean out on two days of the week. The 855 mechanical clamshell was used to assist desander operations.

During the week, the depth of the open trench was measured daily. Table 2 summarizes the trench profile that was measured on August 27. On Graph 1, the current trench profile is depicted in comparison with the trench profile measured on August 20. Graph 2 shows the overall progress of the barrier wall construction.

Slurry

Approximately 134.5 tons of bentonite gel were used to mix fresh slurry on five days during the week. Fresh slurry, when pumped from the holding pond to the open trench near station 30+00, was tested frequently to assess its viscosity and adjusted with a blending pump using water from the fire hydrant as necessary. The viscosity of the slurry was measured using a Marsh funnel, with results generally meeting the specification.

Fresh slurry was pumped into the open trench as needed to keep the excavation open on five days during the week. Slurry samples were collected from the top and the bottom of the trench daily and were tested for viscosity, density (unit weight), filtrate loss, pH and sand content. Analysis of fresh slurry and trench slurry samples from the trench segment either met the specifications or satisfied the quality targets.

Spoils Handling

During the week, spoils were transferred from locations adjacent to the open trench or from the temporary stockpile on top of the landfill to the backfill mix pad near station 24+50.

Backfill and Trench Cleaning

During the week, Inquip mixed and placed approximately 330 cubic yards of backfill material into the open trench. Backfill operations took place on two days during the week. Backfill was limited during the week due to limited space between the toe of the backfill and the toe of the excavation.

The backfill spoils were mixed with approximately two percent of dry bentonite and slurry as necessary to meet quality specifications.

The backfill was tested by PSI for slump, unit weight and moisture content. The unit weight of backfill placed during the week ranged from 122 to 130.5 pounds per cubic foot (pcf). Slump test results averaged 4.0 inches, and the moisture content results ranged from 17.7 to 23.1 percent. All test results met the minimum requirements. Tests on the backfill mixture to be conducted offsite by Mueser-Rutledge and PSI's labs included permeability and gradation. No offsite test results were received during the week.

Prior to backfill placement, the top of the backfill was cleaned to rock over a 40-foot linear stretch with the mechanical clamshell rig. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and confirmed in two locations manually with the downrigger (plumbob on wire). Two samples were collected daily by PSI with a clam sampler from the top of the backfill prior to backfill placement. These samples were visually checked to ensure that the backfill surface in the trench was clean and free of any sand.

Other Activities

Aerotek performed the routine air monitoring conducted at Site R on two days of the week.

Ameren CIPS were onsite two days of the week to reconnect power to the guard trailer, and to relocate the overhead power lines at station 37+90.

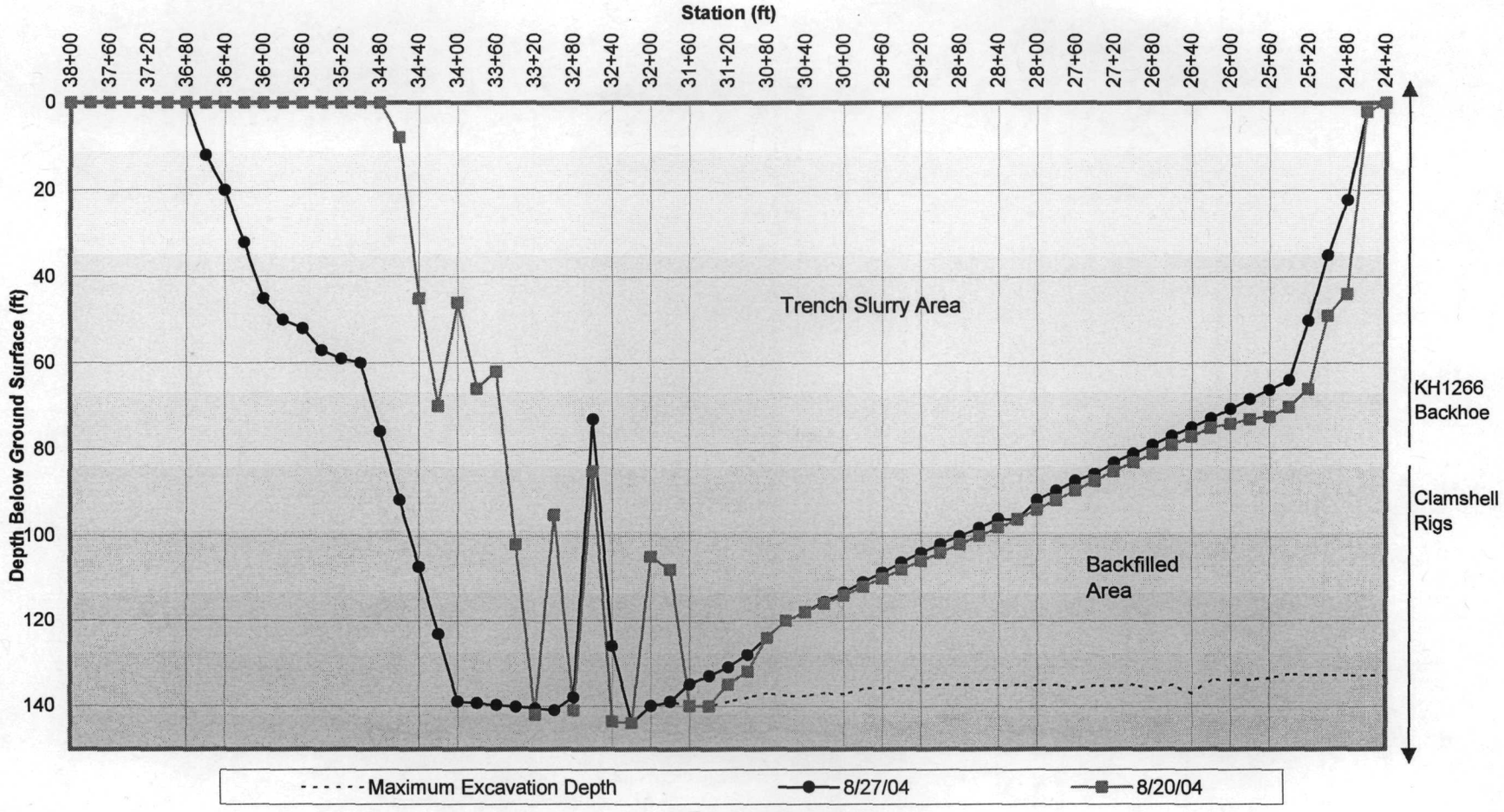
Zahner Survey were onsite one day of the week to place station and elevation hubs on the north leg of the barrier wall trench.

In order to prepare for future stormwater management near the northeast terminus of the barrier wall alignment, Inquip installed a contact water sump pit on the northeast corner of the site, near the proposed end of the barrier wall excavation. An automatic pump to be used in the sump pit was moved from the southwest corner of the site to the northeast corner. Two stormwater culvert pipes were also installed across Riverview Avenue just outside the northeast corner of the property.

TABLE 2
Trench Profile (Downrigger Measurements) for the Barrier Wall Trench – August 27, 2004 1:00(PM)

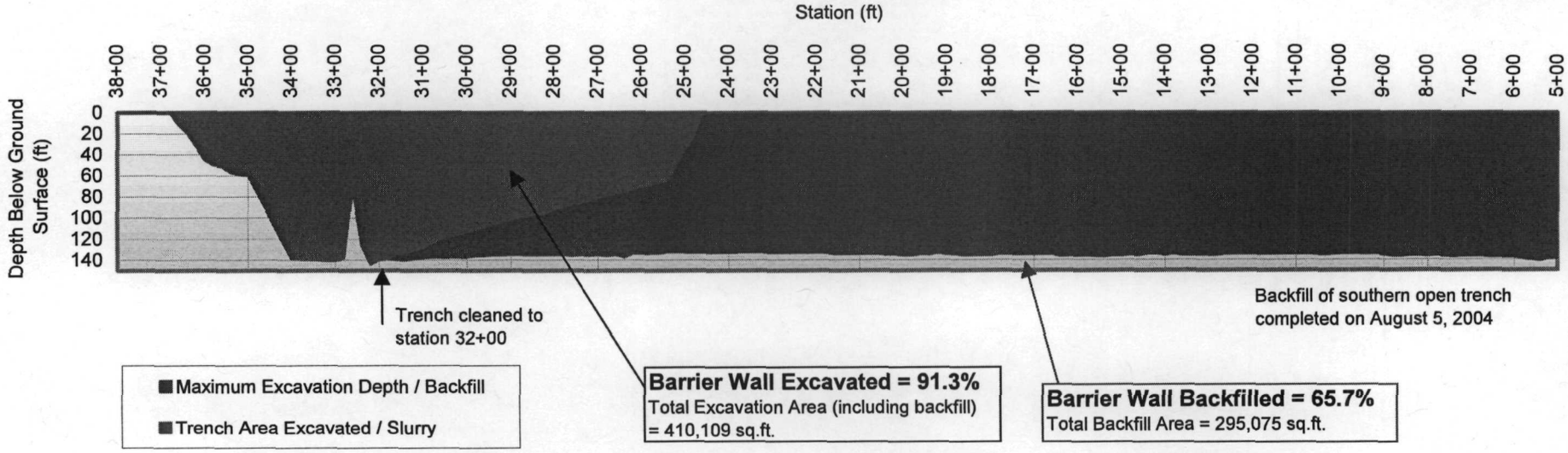
Station ID	Depth to bottom (ft below ground surface)
24+50	2
25+00	57
26+00	69
27+00	80
28+00	90
29+00	100
30+00	111
31+00	128
31+20	131
31+40	133
31+60	135
31+80	139
32+00	140
32+20	144
32+40	126
32+60	173
32+80	138
33+00	141
34+00	139
35+00	60
36+00	45
36+60	12

Graph 1 - Weekly Barrier Wall Construction Progress - Open Trench Segment
August 20 through August 27, 2004



Note: Data plotted for the week through measurements on 8/20/04 and 8/27/04.
Individual panels and wedges are present between stations 32+00 and 34+80.
Some data points are interpolated between the available data points where trench depths were read.

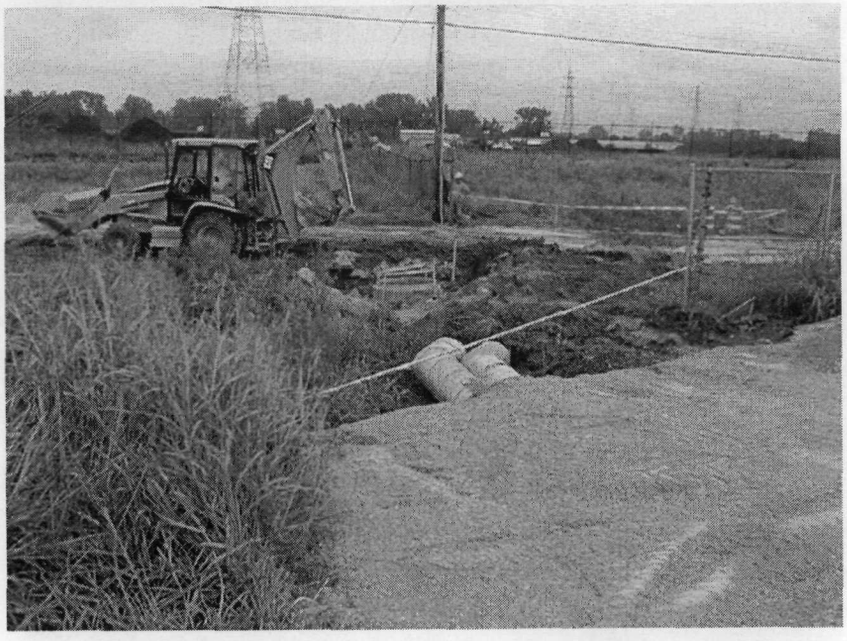
Graph 2 - Barrier Wall Construction Progress by August 27, 2004 (PM)



Note: Data plotted for the week through measurements on 8/27/04.

Photos from August 23, 2004 through August 27, 2004:

Liebherr 843 Hydraulic Clamshell back in service. (August 25, 2004)



Installing the contact water sump pit. (August 24, 2004)